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The impact of restaurant safety measures on customer revisit intentions in the post-covid era

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ABSTRACT

Restaurant safety measures have become a key concern for customers since the beginning of the COVID-19 pandemic. The pandemic has increased customers' awareness and concern toward restaurants' hygiene standards. This study investigated the influence of restaurant safety measures on customer revisit intentions in the post-pandemic era with the mediating effect of customer engagement, gratification, and perceived risk reduction. A quantitative survey-based study was conducted using a structured questionnaire on 248 restaurant customers in Penang and Selangor, Malaysia. The findings reveal that restaurant safety measures do not directly influence customer revisit intentions. In contrast, customer engagement, gratification, and perceived risk reduction positively mediate the relationship between restaurant safety measures and customer revisit intentions. This study provides significant theoretical and practical implications by highlighting insights into how restaurant safety measures trigger customers to revisit restaurants for the restaurant authorities in Malaysia.

KEYWORDS

Restaurant safety measures; perceived risk reduction; COVID-19 pandemic; customer engagement and gratification

Introduction

The COVID-19 pandemic triggered economic crises, financial imbalances, and risks in each gross domestic product (GDP) sector, including the restaurant industry, which shifted customers' service expectations (Song et al., 2021). For business continuity and customer satisfaction, restaurant authorities must ensure that customers feel safe while having dining experiences by attaining operational survival strategies and precautionary measurement practices in the post-pandemic era (Sirimongkol, 2022). The sustainability of a restaurant heavily relies on customer revisit intentions. These intentions can be achieved when customers are satisfied with their prior experience (Rodríguez-López et al., 2020).

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Malaysia provides various dining choices for customers, from traditional hawker stalls to international food chains. The restaurant industry experienced a revenue loss, primarily because of the operational restrictions imposed on restaurants in 2020 – 2021 during the pandemic (Abhari et al., 2022). However, the restaurant industry in Malaysia has recovered instantly because of customers' dining habits, the relaxation of restrictions and the reopening of foreign borders in 2022 (Mahmood et al., 2022; Tjiptono et al., 2022).

Along with the instant recovery of the restaurant industry, several changes have been observed in customers' behavior regarding safety concerns and selecting restaurants for their dining experience (Baba et al., 2023; Mahmood et al., 2022). Despite this, concern about COVID-19 persists; the Malaysian restaurant industry has implemented various initiatives to meet customer expectations of safety precautions by enhancing health safety measures, consequently boosting customer revisit intentions.

In the post-COVID era, factors such as food quality, ambience, safety, sanitation, and staff hygiene practices are crucial for customer satisfaction and intentions to revisit restaurants, as highlighted by Sirimongkol (2022). Moreover, maintaining higher cleanliness and safety standards is essential for retaining and attracting new customers (Y. Y. Chang & Cheng, 2022). However, further research is necessary in the Malaysian restaurant context to understand how safety measures affect customer expectations and intentions to revisit the restaurant.

The current study investigated the influence of restaurant safety measures on customer revisit intentions with the mediating effect of customer engagement, customer gratification, and perceived risk reduction. The study also discusses subsequent aims to provide several significant practical implications based on the approach to regulations for the restaurant industry and its stakeholders in Malaysia.

Literature review

Restaurant safety measures and revisit intention

The post-pandemic scenario has significantly affected the restaurant industry and customers' expectations regarding service. To sustain the COVID-19 pandemic, restaurants focused on and developed several operational survival strategies, including precautionary measurement practices (Zapata-Cuervo et al., 2023). Before the onset of COVID-19, the primary focus for diners revolved around food safety violations, leading to food-related diseases (Harris et al., 2020). Following the pandemic, customers have reservations regarding the potential transmission of the coronavirus during their interactions with service providers, such as restaurants (Bove & Benoit, 2020). Similarly, restaurant owners are increasingly aware of this issue and are implementing safety

protocols after sensing the sensitivity of the issue to ensure customer well-being, safety, and social resilience.

Consequently, a growing focus has been on examining customers' responses to safety policies and regulations implemented in restaurants to mitigate the risk of illness (Gkoumas, 2022). Customer's health anxiety is highly correlated with their food consumption intention. It positively affects their food consumption intentions (Kurkcu et al., 2023).

This study focuses on post-pandemic diner behaviors, which can be a proper response to perceived threats. It concerns the stimulus-organism-response (SOR) framework, pointing at psycho-mechanisms that make food-borne illnesses recognizable inside a restaurant (Ackerman et al., 2018). Using the health belief model (HBM), Hartwell et al. (2024) studied 444 students enrolled in undergraduate programs at universities in Brazil. They explained a few aspects (risk susceptibility and risk severity) of customers' efforts to reduce disease risks and avoid adverse health outcomes. Risk susceptibility indicates a customer's perception of their susceptibility to the threat of being ill. In contrast, risk severity is the customers' perception of the extent of the damage to their health due to consuming food.

The SOR model indicates that "people usually feel a thrill, delight, or control by appealing rewards" (H. J. Chang et al., 2011). Hence, they tend to engage in pleasurable actions. These theories show that restaurant safety is not an incorrect exaggeration but a reliable safety indicator. Fewer violations are attributed to pandemic-related restrictions on field observations and infrequent health inspections. The decision to revisit a restaurant depends on a customer's sense of safety, security, and comfort.

Meanwhile, Lee et al. (2019) argued that revisit intention is critical for businesses to sustain consistent performance. Revisit intention is generally recognized as an essential behavioral intention utilized in marketing research. Utilizing revisit strategies means interacting with present customers to lower the expense of getting new ones (Sirimongkol, 2022). According to the HBM, individuals who feel more at risk from COVID-19 may prefer restaurants and cafes with strong safety policies. The existing studies identified a few factors shaping customers' decision-making (Gupta & Pande, 2023; Kung'u et al., 2022).

Cleanliness and sanitation practices

Hygiene and well-being are significant in workplaces (Elkhwesky et al., 2019). As such, the hospitality sector needs to adhere to hygiene protocols. According to Selim et al. (2020), installing such practices as habits is imperative so that enduring behavioral change can be achieved, thus promoting healthy societies. The SOR model underscores those environmental stimuli, such as cleanliness and sanitation, influence customers' emotional states and subsequent

behaviors (Mehrabian & Russell, 1974). Conversely, when individuals perceive unpleasant stimuli, such as poor hygiene practices, it can trigger negative emotional responses within the organism, leading to avoidance behaviors (Judge & Larsen, 2001; Y. Liu et al., 2023). Majeed and Ramkissoon (2020) observed how the pandemic negatively impacted international restaurants, leading to low wages and reduced employees. Rosemberg (2020) emphasized prioritizing workforce health and safety during emergencies. Selim et al. (2020) highlighted success stories of restaurants strictly following protocols during the pandemic. Henderson and Ng (2004) suggested staff safety, emergency procedures, health screening, and cleanliness to retain customers. Restaurants also adopted sanitary laws and food safety procedures to resist the COVID-19 pandemic (de Freitas & Stedefeldt, 2020). Gupta and Pande (2023) revealed that restaurant hygiene precautions shape the customers' attitude and their revisit intentions to the restaurant.

Staff hygiene practices

Customers often choose restaurants and other dining venues that match their acceptable requirements for quality and affordability. At the same time, those who pay scarcer attention to these aspects generally receive fewer customers and lower revenues (Barber & Scarcelli, 2009). Furthermore, customers place importance on such factors as "food choices, rates, timely service, and promotional deals" when choosing a restaurant. HBM emphasizes that perceptions of susceptibility and severity of health risks influence customers' evaluation of staff hygiene practices, affecting their dining decisions (Rosenstock, 2005). These factors (which differ by person) motivate customers to visit a restaurant. Odeyemi (2013) argued that customers' beliefs toward hygiene are influenced by cultural variety, restaurant cuisine, food safety, and the personal hygiene habits of those who handle food. Picchioni et al. (2022) highlighted such factors as cleanliness and staff hygiene as primary determinants of food quality in catering businesses. The restaurant environment's cleanliness, impacted by pests, affects overall dining experiences. Keskin et al. (2024) mentioned that the restaurant environment positively enhances customer loyalty and triggers behavioral intention. When selecting restaurants, customers consider various factors, including food tastes, quality, ingredients, variety, and presentation (Van Embden et al., 2022). Surrounding factors, such as staff hygiene practices, décor, and ambience, significantly influence customer decision-making (Kung'u et al., 2022).

Contactless services

The hospitality sector involves the delivery of services and the maintenance of food safety regulations. Implementing and adopting sustainable practices can

significantly enhance the effectiveness and establishment of a risk-free environment (Kim et al., 2021). The SOR framework suggests that introducing contactless services can be a positive environmental stimulus, enhancing customer satisfaction and encouraging revisit intentions (Mehrabian & Russell, 1974). The recent global pandemic has significantly impacted individual perspectives within the industry, leading top management to express a willingness to integrate automation into their operational processes (S.-H. Chen et al., 2021). Al-Zyoud (2023) identified restaurant hygiene and QR code menu usage as essential predictors for customer re-dine intention in Jordanian eateries and restaurants. Fuste-Forne (2021) further emphasized the challenges and potential of robots in restaurants, exploring their role in service experiences and associated ethical concerns. S.-H. Chen et al. (2021) stressed the benefits of robotics in enabling contactless customer interactions. Kim et al. (2021) studied how customers perceive interactions with humans and robots, noting a preference for robotic personnel influenced by perceived danger, especially during global health crises. Chuah et al. (2022) found that various values shape customers' readiness for robotic restaurants.

H1: *Safety measures (cleanliness and sanitation practices, staff hygiene practices and contactless services) significantly affect the revisit intentions behavior of Malaysian diners.*

Mediation relationships

Customer engagement

According to Hollebeek and Rather (2019), there are several concepts of customer involvement in the literature, including cognitive, emotional, and behavioral components. Existing research has focused on the attitudes and actions of customers after they make a purchase. However, a few scholars have contended that customer engagement is a psychological state resulting from contact with a primary item. The SOR model posits that such contact (stimuli) leads to internal processing (organism) and results in behavioral outcomes (response), indicating that customer engagement is influenced by their interaction with environmental factors (Mehrabian & Russell, 1974). Only a few studies have drawn attention to the association between customer satisfaction and customer engagement (Torres & Kline, 2013) and revisit intentions (Hui et al., 2007). Likewise, Hui et al. (2007) observed a significant association between customer involvement and revisit intentions of diners. Indeed, if a restaurant is perceived as good, more time would be spent there (Nusairat et al., 2020). The Health Belief Model (HBM) suggests that perceived benefits and barriers of health-related actions can significantly influence customer engagement and revisit intentions, especially during a pandemic

(Rosenstock, 2005). However, there is no empirical support for the idea that customer interaction may mediate the relationship between safety measurement and revisit intentions. The existing literature lacks evidence for the connection between safety measures and revisit intentions in the restaurant industry (Hollebeek & Rather, 2019; Rather et al., 2022). While it has been suggested that providing safety, especially in the face of health challenges, is crucial (Bae & Chang, 2020), the direct link between safety measures and revisit intentions requires further exploration. The SOR framework indicates that environmental stimuli such as safety measures can directly affect emotional responses, influencing behaviors such as revisit intentions (Mehrabian & Russell, 1974). Health-related crises impacting restaurant businesses globally underscore the need for understanding this relationship. In line with the HBM, customers who perceive higher susceptibility and severity of health risks are more likely to be influenced by a restaurant's safety measures, affecting their engagement and revisit intentions (Rosenstock, 2005). Despite the recognized connection between customer involvement and intentions to revisit (Hui et al., 2007), empirical support for the mediating role of customer engagement in the safety measures – revisit intentions link must be included in the literature.

H2: *Customer engagement significantly mediates between safety measures and revisits the intentions and behavior of diners in Malaysia.*

Customer gratification

Gratification refers to a favorable emotional reaction or contentment that arises from attaining a specific desire (Katz et al., 1974). Customers seek personal psychological gratification by patronizing a food establishment to indulge in its specialized offerings. When engaging in such activities, a customer undergoes a sequence of gratification processes. Parker and Mathews (2001) posited that pre- and post-consumption expectancy have been identified as contributing factors. This notion can also be applied to the context of pre- and post-COVID outcomes. The SOR model explains how environmental factors, such as restaurant safety measures, can create an emotional state in customers that leads to a behavioral response, such as revisiting the restaurant (Mehrabian & Russell, 1974).

Cronin et al. (2000) emphasized the significance of customer experience and perception in dining. Despite this, current research on dining experiences, satisfaction, and revisit intentions needs more conclusive findings. According to the HBM, customers' perceptions of the susceptibility and severity of health risks influence their dining decisions, which are crucial for understanding the relationship between safety measures and revisiting intentions (Rosenstock,

2005). C.-F. Chen and Tsai (2007) argued that positive perceptions impact customer gratifications and revisit intentions. Kozak and Rimmington (2000) noted that customer satisfaction influences repeat patronage. The link between brand loyalty and repurchase, as established in previous research (Hui et al., 2007), may differ in the case of safety – particularly in such health emergencies as global pandemics. The SOR model emphasizes that positive environmental stimuli, such as robust safety measures, enhance customers' emotional states, increasing satisfaction and loyalty (H. J. Chang et al., 2011).

Comprehending the association between safety measures and revisit intentions, considering customer gratification, could address satisfaction's impact on the dining experience and revisit intention. According to Hui et al. (2007), food service providers must prioritize product quality, services, and robust safety measures to boost dining experience and profitability. Furthermore, the HBM implies that when customers perceive high risks, they are more likely to choose establishments with robust safety protocols, affecting their revisit intentions (Ko et al., 2023). This enhances customer retention and opens avenues for more significant investment opportunities.

H3: *Customer gratification significantly mediates between safety measures and revisits the intentions and behavior of diners in Malaysia.*

Perceived risk reduction

The phenomenon of perceived risk reduction elucidates the strategies customers employ to mitigate the potential adverse outcomes of their purchase decisions (Joo et al., 2021). Perceived risk in customer behavior anticipates adverse outcomes, specifically health hazards (Sweeney et al., 1999). Such risks arise from the uncertain impacts of actions and experiences (Pillai et al., 2022). Acuti et al. (2019) pointed out a persistent gap in addressing the potential of perceived risk as an intermediary between safety measures and revisiting intentions. According to the Health Belief Model (HBM), perceived risk plays a crucial role in influencing customers' decisions regarding safety measures in restaurants (Rosenstock, 2005). Customers' perceptions of susceptibility and severity of health risks can significantly affect their satisfaction and revisit intentions (Lo et al., 2024). Lacey et al. (2009) and Wen and Kwon (2017) emphasized the importance of perceived risk in customer retention. The SOR model suggests that perceived risk is a stimulus that can evoke emotional responses and influence behavioral intentions in restaurant settings (Mehrabian & Russell, 1974). Expert evaluations are risk mitigators, lowering clients' risk perceptions (Huifeng et al., 2020). Studied extensively, perceived risk pertains to customer perceptions of potential challenges in purchasing (Dowling & Staelin, 1994). Addressing customer concerns about risks can

positively relate to behavioral intention. Prioritizing product quality, services, and robust safety measures are crucial for food service providers, impacting customer revisit intentions and enhancing business profitability for more significant investment opportunities.

H4: *Perceived risk reduction significantly mediates between safety measures and revisits the intentions and behavior of diners in Malaysia.*

Methodology

The methodology section of a research study holds notable significance as it provides clear insights into the sources of measurement items, questionnaire translation processes, sample sizes, sampling, and data collection procedures.

Measurement items and questionnaire development

The restaurant's safety measures (RSM) consist of five measurement items adapted from Jeong et al. (2022). In addition, measurement items for the mediating variables, customer engagement (CE; four items), customer gratification (CG; four items), and perceived risk reduction (PRR; three items) were adapted from P. Liu and Tse (2018) and Hui et al. (2007); Alhassan et al. (2020) and Y. C. Wang and Lang (2019); and Hakim et al. (2021), respectively. Furthermore, three measurement items were employed to measure revisit intentions (RI), adapted from Kusumawati et al. (2020). Appendix 1 presents all the measurement items. Moreover, three attention check questions were included in the questionnaire, adapted from Pei et al. (2020) (see Appendix 2).

Following Brislin's (1970) recommendation, the back-translation method was employed to translate the English questionnaire into Bahasa Melayu. Initially, one translator translated the questionnaire into Bahasa Melayu, and another translated it back into English. The differences were then compared and addressed. Pre-testing involved two academics and two industry professionals, leading to minor modifications. The questionnaire was then subjected to a pilot test involving 30 respondents, confirming its robustness and appropriateness for the intended research (Teresi et al., 2022). The present study is survey-based and follows a deductive approach.

Research area and target population

Malaysian restaurant customers who have visited restaurants for dining in the post-COVID era and above 18 were the study's target population. Due to their unique culinary landscapes, data were collected physically from two states of Malaysia, Penang and Selangor. Penang, known as the "food paradise" of

Malaysia, offers a diverse array of local and international cuisines (Jung, 2018). Meanwhile, with its dynamic restaurant sector, Selangor reflects Malaysia's multiethnic society through its wide range of dining options, including traditional hawker stalls and international franchises (Lee et al., 2019a). This selection allows for a comprehensive understanding of customer behaviors and preferences in different culinary environments within Malaysia.

Sample size, sampling technique and data collection

The inverse square root method determined a minimum sample size of 160. It is a widely adopted technique for estimating minimum sample size in PLS-SEM, as Hair et al. (2021) and Kock and Hadaya (2018) recommended. The study adopted a non-probability and judgmental sampling method. 284 questionnaires were collected from the 10th of June 2023 to the 10th of September 2023, making this study cross-sectional. Respondents who failed to provide the right answer to the attention check questions and straight-lining and zig-zag lining responses were excluded. After data screening, 248 samples were taken for the data analysis, which satisfied the threshold of minimum number of sample size determined by the inverse square root method (Kock & Hadaya, 2018).

Common method bias (CMB)

Podsakoff et al. (2012) recommend the use of the partial correlation method by employing marker variables that are unrelated or social desirability items. The present study used unrelated marker variables to assess the Common Method Bias (CMB). The model employed the difference in the R^2 value of the endogenous variable with and without marker variables. The significant difference in the R^2 value indicates the presence of CMB. The statistical output reveals the R^2 values with and without marker variables as 0.692 and 0.675, respectively, indicating no issues with CMB.

Results and findings

Respondents' demographic profile analysis and interpretation

The demographic profile of the respondents (see Table 1) illustrates that the participation of male and female were 57.26% and 42.74%, respectively. In addition, the majority of the respondents were 25–34 years old (46.77%), followed by 18–24 years old (21.37%), 35–44 years old (12.50%), 45–54 years old (10.89%), and 55 years and above (8.47%). Additionally, most of the respondents were married (61.29%), followed by single (31.85%), and others (6.86%). Furthermore, most respondents hold an undergraduate degree

Table 1. Demographic profile of the respondents.

Variables	Category	Frequency	Percentage
Gender	Male	142	57.26
	Female	106	42.74
Age (In Years)	18–24	53	21.37
	25–34	116	46.77
	35–44	31	12.50
	45–54	27	10.89
	55 and above	21	8.47
Marital Status	Single	79	31.85
	Married	152	61.29
	Others	17	6.86
Level of Education	Primary	16	6.45
	High School	49	19.76
	Undergraduate	128	51.61
	Graduate	44	17.74
	Others	11	4.44
Month Income in MYR (Malaysian Ringgit)	Below 2000 MYR	51	20.56
	2000–4000 MYR	113	45.56
	4001–6000 MYR	45	18.15
	6001–8000 MYR	28	11.29
	8001 –10,000 MYR	09	3.63
	Above 10,000 MYR	02	0.81

(51.61%). Moreover, most respondents claimed their monthly salary was in the range of 2,000–4,000 MYR (45.56%).

Measurement model assessment and interpretation

Figure 1 illustrates five reflective (restaurant safety measures, customer engagement, customer gratification, perceived risk reduction, and revisit intentions) constructs. The authors evaluated the reliability and convergent validity of the measurement models by the examination of their outer loading, composite reliability (CR), Cronbach's alpha (CA), and average variance extracted (AVE) (see Table 2). The statistical outcome indicates that other than the loading value of RSM5, all item loading, CA, and CR values were above 0.7, and the AVE values were above 0.5, which is greater than the suggested threshold (Hair et al., 2019, 2021). This indicates that the construct

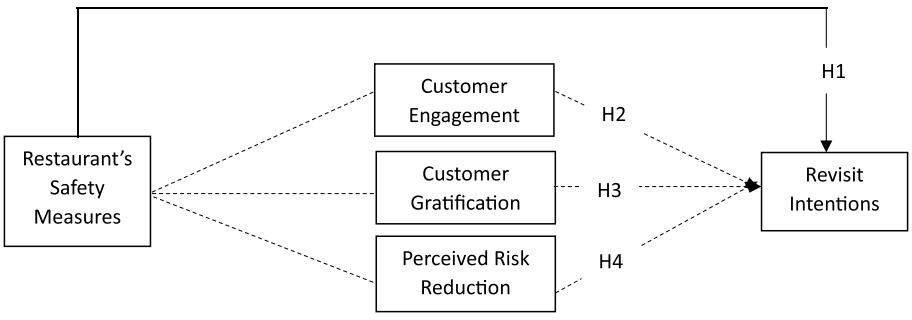

Figure 1. Conceptual research framework.

Table 2. Construct reliability and convergent validity.

Constructs	Items	Loading	CR	CA	AVE
Customer Engagement	CE1	0.806	0.848	0.898	0.688
	CE2	0.849			
	CE3	0.871			
	CE4	0.787			
Customer Gratification	CG1	0.899	0.927	0.948	0.821
	CG2	0.913			
	CG3	0.915			
	CG4	0.896			
Perceived Risk Reduction	PRR1	0.939	0.922	0.951	0.866
	PRR2	0.933			
	PRR3	0.919			
Revisit Intentions	RI1	0.903	0.847	0.907	0.766
	RI2	0.866			
	RI3	0.855			
Restaurant Safety Measures	RSM1	0.900	0.909	0.934	0.740
	RSM2	0.896			
	RSM3	0.890			
	RSM4	0.910			
	RSM5	0.684			

Table 3a. Discriminant validity result (fornell-larcker criterion).

Fornell-Larcker criterion					
Construct	CE	CG	PRR	RI	RSM
CE	0.829				
CG	0.665	0.906			
PRR	0.762	0.608	0.930		
RI	0.759	0.694	0.730	0.875	
RSM	0.772	0.715	0.731	0.695	0.860

Table 3b. Discriminant Validity Result (Heterotrait-Monotrait Ratio (HTMT) – Matrix).

Heterotrait-monotrait Ratio (HTMT) – Matrix					
Construct	CE	CG	PRR	RI	RSM
CE	–				
CG	0.751				
PRR	0.857	0.657			
RI	0.890	0.782	0.825		
RSM	0.886	0.778	0.794	0.786	

and convergent reliability were achieved. RSM5 was not excluded from the present study because of its higher reliability. Moreover, the discriminant validity was assessed through the Fornell-Larcker criterion and Heterotrait-Monotrait ratio (HTMT) – Matrix (see Tables 3a,b). Table 3a shows that each construct's square root of the residual AVE exceeded the correlation values in the respective rows and columns, indicating satisfactory discriminant validity (Fornell & Larcker, 1981). Moreover, Table 3b indicates that the HTMT values were lower than 0.9, which did not exceed the recommended threshold, thus indicating satisfactory discriminant validity (Henseler et al., 2015).

Table 4. Result of structural model assessment.

Hypothesis	Relationship	Original Sample	T Statistics	P value	Remarks	f^2	Inner VIF	R^2	Q^2
H1	RSM -> RI	0.033	0.374	0.685	Rejected	0.001	3.295	0.675	0.478
H2	RSM -> CE -> RI	0.258	4.986	0.000	Supported	N/A	N/A		
H3	RSM -> CG -> RI	0.197	3.682	0.000	Supported	N/A	N/A		
H4	RSM -> PRR -> RI	0.208	4.272	0.000	Supported	N/A	N/A		

Structural model assessment and interpretation

After evaluating the measurement model, the structural model was assessed through the coefficient of determination (R^2), effect size (f^2), multicollinearity test (inner VIF), predictive relevancy (Q^2), and hypotheses tests. As per Hair et al. (2021), the R^2 value (0.675) indicated a good predictive power in the model, as shown in Table 4. Correspondingly, the Stone – Geisser (Q^2) value was 0.478 for revisit intentions. The outcomes can be deemed both satisfactory and meaningful due to the values significantly exceeding zero (Hair et al., 2019). Moreover, the inner VIF values were 3.295, thus indicating the non-appearance of a multicollinearity issue. In contrast, the f^2 value showed a lower effect between RSM and RI. In addition, the authors also conducted a bootstrapping analysis using Smart-PLS (version 4.0.9.2) to assess the statistical significance of the path coefficient, employing 5,000 subsamples of 248

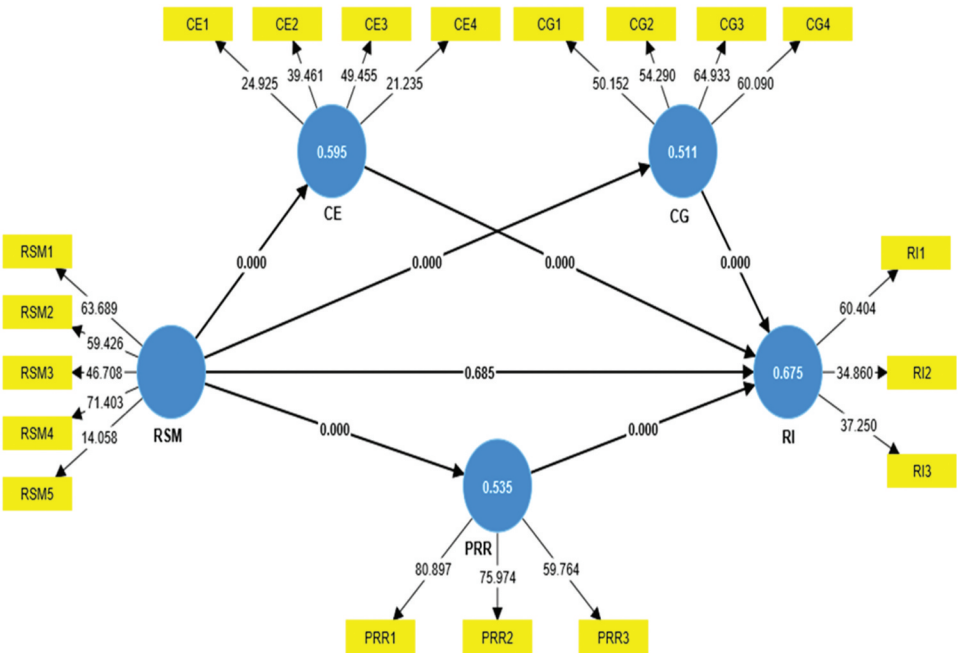

Figure 2. Bootstrapping outcome with P value.

sample sizes. Hair et al. (2021) recommended that a hypothesis can be supported when the t-value is above 1.96 and lower than 0.05. The statistical results indicate that there is no significant relationship between the restaurant's safety measures and revisit intentions, as evidenced (Table 4 and Figure 2) by the low t-value (0.374) and high p-value (0.685). Thus, H1 is rejected. However, the mediating roles of customer engagement, gratification, and perceived risk reduction in the relationship between a restaurant's safety measures and revisit intentions were found to be significant due to their high t-values (4.986, 3.682, and 4.272) and low p-values (0.000). Therefore, H2, H3, and H4 are supported.

Discussion

The results revealed no direct link between restaurant safety measures and customer revisit intentions. The study focused on cleanliness, staff hygiene, and contactless services, which are essential for customer well-being. However, the findings indicated no direct relationship between restaurant safety measurement and customer revisit intentions. Therefore, H1 was not supported (t-value 0.374; p-value 0.685). Sirimongkol (2022) stated that a restaurant's service quality is highly related to its level of cleanliness and staff hygiene. Despite their importance, the findings indicated that these safety measures only partially influence customers' revisit decisions. Cleanliness and staff hygiene build trust and engagement with the restaurant brand, eventually influencing revisit intentions. Furthermore, H2 was supported (t-value 4.986 and p-value 0.000), indicating that customer engagement mediates the relationship between restaurant safety measures and revisit intentions. The findings illustrate that safety measurements enhance customer engagement with the restaurant by generating brand awareness, trust, and loyalty, eventually triggering customer revisit intentions. The study emphasizes the significance of implementing standard and proper safety measures in restaurants to boost customer engagement and revisit intentions.

H3 was also supported (t-value 3.682 and p-value .000), showing that customer gratification mediates the relationship between restaurant safety measures and revisit intention. From a diner's perspective, customer gratification is the highest satisfaction (related to a restaurant's products and services) that customers can have. The findings suggest that the restaurant safety measurement increases customers' satisfaction with the product/service, leading to customer revisit intentions. Huete-Alcocer and Hernandez-Rojas (2022) argued that safety considerations are crucial in customer satisfaction, brand loyalty generation, and revisiting intentions. It is worth noting that safety initiatives are fundamental in boosting customer satisfaction and influencing a customer's return to a restaurant. Moreover, H4 was also supported (t-value 4.272 and p-value 0.000), indicating that perceived

risk reduction mediates the link between safe restaurants and revisit intentions. This demonstrates the significance of safety precautions in customers' reduced perceived risk about the restaurant and increased intention to return. Karagöz et al. (2023) concluded that high-risk perceptions negatively influence individuals' revisit intentions. Safety and sanitation promote tourist satisfaction, reduce customer risk perception, and enhance the probability of returning (J. V. Chen et al., 2017; Rather, 2021). Furthermore, perceived risk reductions act as intermediate mechanisms between safety actions and customer intentions. Further, as per de Rooij et al. (2022), safety measures adopted by the destination authority significantly correlate with tourist intentions to revisit a destination. In this case, higher safety measures lead to an assumption of low risks, thereby boosting the chances of returning visitors.

Theoretical implications

The research contributes significantly to the theoretical underpinnings of restaurant customer revisit intentions and restaurant authorities' implemented safety measures in the post-COVID era by incorporating the Stimulus-Organism-Response (SOR) Theory and Health Belief Model (HBM) in Malaysian restaurants context. HBM focuses primarily on individual perceptions and beliefs about health threats and benefits. For instance, Haddad and Ngah (2024) have used HBM to assess the food safety behaviors of restaurant customers in Jordan based on perceived severity and susceptibility. Moreover, Huang et al. (2020) predicted the travelers' satisfaction and M. Wang et al. (2021) based on an individual's perception, which are internal factors. The S-O-R framework acknowledges that behavior is not solely determined by individual beliefs but also by the interaction between stimuli, internal processes, and responses. The S-O-R framework takes a broader view, considering internal and external factors that influence behavior. Therefore, to fill this gap, this research has engaged the two theories, SOR with HBM, to assess the restaurants' customer revisit intentions by including the mediating effect of customer engagement, customer gratification, and perceived risk reduction.

Practical implications

The study holds practical implications for restaurant authorities in Malaysia, emphasizing the imperative of prioritizing a comprehensive approach to safety measures. This approach should include sanitation, ventilation, and transparent communication of protocols, particularly in the post-COVID era, to encourage customer revisit intentions. While cleanliness, contactless payment and staff hygiene are foundational, they

alone may not sway customers' decisions to return. Thus, adopting a holistic safety strategy is essential, as it cultivates confidence among patrons, nurturing a feeling of security that incentivizes repeat visits.

Restaurant authorities should take initiatives that facilitate meaningful customer interactions, including personalized communication and interactive experiences. Active engagement between customers and restaurants will create bonding, foster loyalty, and boost the likelihood of return visits. Thus, restaurant authorities in Malaysia should pay intense attention to customer engagement, resulting in a link between safety measures and revisit intentions, bridging the gap between perceived safety and customers. This initiative will improve trust between customers and the restaurants, and customers will feel secure and have a pleasurable dining experience.

Conclusion, limitations, and future research directions

The present study explored the evolving landscape of the Malaysian restaurant industry in the post-pandemic period. The study investigated the influence of restaurant safety measures on customer revisit intentions, considering the mediating variables of customer engagement, customer gratification, and perceived risk reduction. The findings suggest that restaurant safety measures positively influence customer engagement, customer gratification, and perceived risk reduction, ultimately triggering customers to return to a restaurant. Moreover, the findings shed light on numerous important insights, unveiling profound theoretical implications and valuable practical considerations for the restaurant industry and its stakeholders.

Despite its valuable implications, this study has limitations. The sample size of 248 from 2 Malaysian states may limit its generalizability. Accordingly, future research should encompass a broader population and diverse regions. Expanding to international contexts and exploring cultural differences would enhance cross-cultural applicability. The study's cross-sectional nature calls for future longitudinal research for greater generalizability. Exclusive focus on restaurants may limit applicability to other hospitality segments. Future research avenues could delve into the influence of safety measures on customer behavior across the hospitality industry, examining the role of employees and integrating technology into experiences across the sector.

Disclosure statement

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Appendix

Appendix 1: Measurement Items

Restaurant Safety Measures - (Jeong et al., 2022)
RSM 1: The restaurant's restrooms were spotlessly clean and maintained with strict sanitary measures.
RSM 2: Utensils and condiments on the table were thoroughly sanitized, ensuring a safe dining environment.
RSM 3: Hand wash and sanitizer were readily available for customers, promoting hygiene.
RSM 4: The restaurant offered touch-less payment options, minimizing physical contact.
RSM 5: Staff adhered to hygiene standards, wearing masks and gloves, contributing to a safe dining experience.
Customer Satisfaction - (Hui et al., 2007; P. Liu & Tse, 2018)
CS1. I was satisfied with the services provided by the restaurant.
CS2. I was satisfied with the facilities offered by the restaurant.
CS3. The quality of the restaurant's overall environment and ambience met my expectations.
CS4. I found the overall hygiene standards implemented by the restaurant to be satisfactory.
Customer Gratification - (Alhassan et al., 2020; Y. C. Wang & Lang, 2019)
CG1: Dining at this restaurant uplifts my mood when feeling down, providing a comforting atmosphere.
CG2: For me, visiting this restaurant serves as a means to alleviate stress and unwind from daily pressures.
CG3: I experience a sense of joy when the restaurant's safety protocols, including cleanliness and staff hygiene standards, along with service quality, meet my expectations.
CG4: Using touch-less payment systems at restaurants greatly enhances my convenience.
Perceived Risk Reduction - (Hakim et al., 2021)
PRR1: I feel assured about my safety when I dine out at restaurants.
PRR2: I trust that the restaurants I frequently visit are lower in risk.
PRR3: I am convinced that the restaurants I am familiar with prioritize and reliably ensure health safety.
Revisit Intentions - (Kusumawati et al., 2020)
RI1: I am inclined to revisit the restaurant.
RI2: I am considering revisiting the restaurant.
RI3: I intend to revisit the restaurant.

Appendix 2: Attention Check Questions

(1) **We want to test your attention, so please click on the answer Agree**.
   (I) Strongly disagree
   (II) Disagree
   (III) Neutral
   (IV) Agree
   (V) Strongly agree

(2) **We want to test your attention, so please click on the answer Disagree**.
   (I) Strongly disagree
   (II) Disagree
   (III) Neutral
   (IV) Agree
   (V) Strongly agree

(3) **We want to test your attention, so please click on the answer Neutral**.
   (I) Strongly disagree
   (II) Disagree
   (III) Neutral
   (IV) Agree
   (V) Strongly agree